"SPE Testing Made Easy"

Cable Qualifier

Solution for Testing Ethernet-APL & 10Base-T1L Cables

Ideal for Field Testing Easy to Use Portable Low Cost

The verification of cables installed in manufacturing and industrial SPE networks is critical as the environment may subject them to a variety of conditions such as electromagnetic interference (EMI) from surrounding equipment, vibrations, moisture, temperature changes and more. The primary cable faults in SPE and Ethernet-APL applications are open and short circuit conditions, insertion loss that is too high, or DC Loop Resistance levels that are unacceptable for performance. These may result in data packet loss which can cause a machine to shut down or a critical device to fail. The ability to assess cable reliability during installation or to identify and troubleshoot issues quickly and easily when they occur is essential to peak operation. A portable cable tester is the ideal solution.

Existing cable testers on the market are expensive and very complex to use. Telebyte's Cable Qualifier can be used by cable installers with minimal training. It offers a portable and affordable method for testing the performance and reliability of 10BASE-T1L and Ethernet-APL cables in the SPE network. This easy-to-use system allows the user to test per the IEEE's 802.3-2022 10BASE-T1L and Ethernet-APL standards that define the cable limits for data and power over data lines. The Cable Qualifier App provides straightforward selection of the Standard, Data Only, or Power Class as well as simple Pass/Fail indicators. The Cable Qualifier App is available for Android, IOS and Windows.

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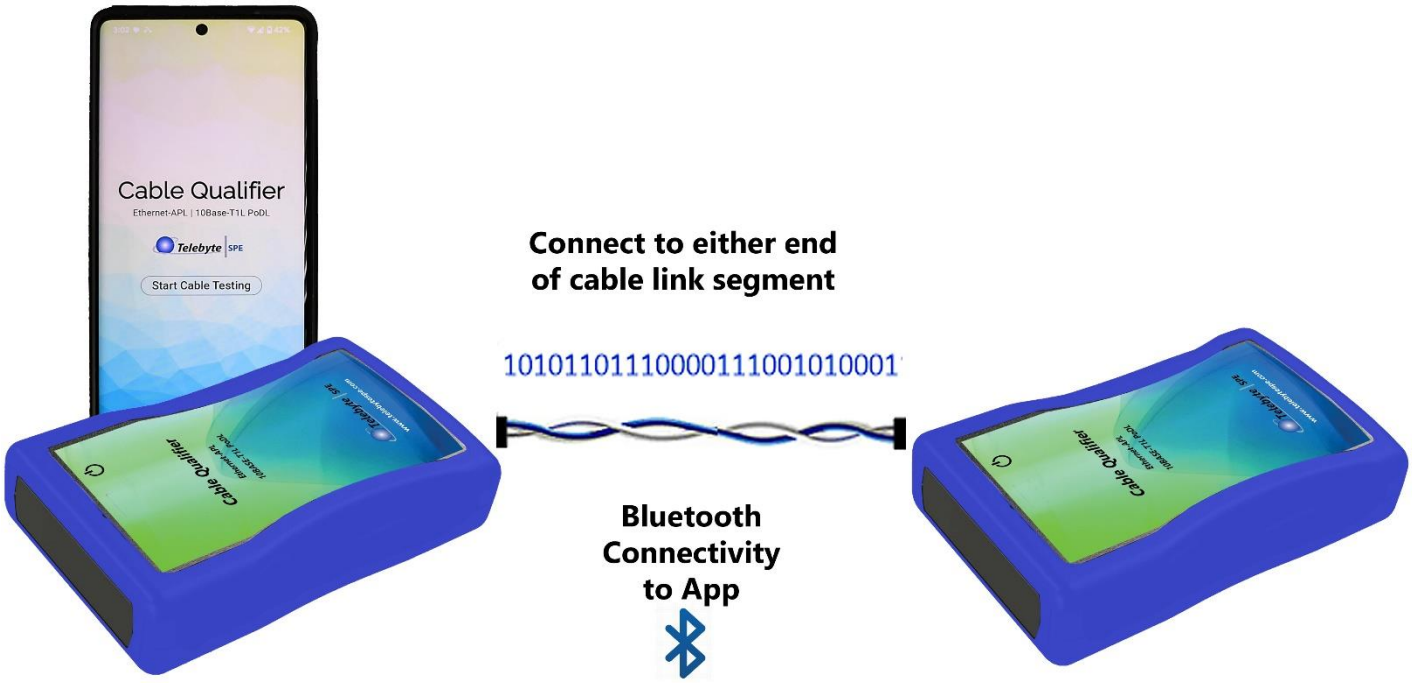
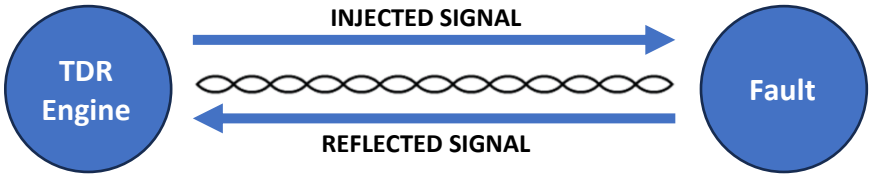
Features Include:

- Simple or advanced modes
- Clear Pass/Fail indicators: green (pass), orange (marginal) or red (fail) identify the quality of the 10BASE-T1L or Ethernet-APL link with traffic on the cable under test
- Low cost compared to other SPE testers
- Easy to operate
- Qualify cable for
  - Ethernet-APL Power Classes Spur A, B, C and Trunk 3 & 4
  - PoDL Type E Power Classes 10-15
- DC Loop Resistance measurement
- Tone generator and detector
- Ground Fault Detection
- Time Domain Reflectometry (TDR)
- Bit Error Rate testing
- Shield Continuity verification
- Traffic generator and error checker
- Link Quality monitoring (SNR)
- Operating Modes 1.0Vpp & 2.4Vpp
- Bluetooth 5.4 Low Energy
- Battery Operated
- Controlled by Cable Qualifier App on Smart Phone or PC (Android, IOS, Windows)
  - Download or email detailed PDF report from Cable Qualifier App
  - Monitor battery health
  - Language support in English and Chinese
- Firmware is field upgradable via USB
- Removable silicone rubber boot provides additional layer of grip and protection



Cable Fault Detection Using Time Domain Reflectometry (TDR)

The Cable Qualifier implements TDR to identify open and short conditions in the cable, assess the distance from the PHY to the cable fault, and estimate the cable length. The built-in TDR fault detector has a time resolution of 8.3 ns, which translates to a length resolution of less than 1m and a detection range of over 1600m, with an accuracy of 2%.



Specifications

Connectors	• 3-position terminal block, 5.08mm ○ Pluggable mating connector, 12AWG to 30AWG • Micro-USB B for firmware updates Custom cable adapters available upon request
Control	Power on/off push-button switch
Indicators	Blue LED to identify Controller, Orange LED to identify Remote unit Blinking to indicate connection between Controller and Remote unit
Power	Two AA batteries
Connectivity	Bluetooth 5.4 Low Energy
Dimensions	4.63 in x 2.84 in x 1.00 in (118 mm x 72 mm x 25 mm)

Ordering Options

Model	Description
CQT1L10	Cable Qualifier Handheld Tester and Cable Qualifier App (Android, IOS and Windows) Note: Two CQT1L10 units are required to test cables, one on each end of the cable